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A DUAL-PURPOSE EXTRACTION RACK

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In connection with the determination of DDT in milk and fats by the colorimetric method of Schechter et al. (1, 2), it has been necessary to make extractions of fats and of nitrated DDT on large numbers of samples. To facilitate handling the separatory funnels required in these extractions, a convenient yet compact rack has been designed and constructed, as shown in figures 1 to 3. The materials used-- boards, stormwindow braces, and spring-type night latches with chains-- can be purchased at almost any lumber yard.

The part of the rack used in the separation of DDT from milk and fats holds two banks (A, C) of eight 500-ml. separatory funnels arranged in tiers. The tips of the funnels in the upper bank (A) are kept directly over the necks of the funnels below by a board (B) fastened to the uprights and notched to fit the upper funnels just above the stopcocks. On the lower bank (C) removable blocks (E) 1 1/2 inches thick are placed under the funnels to keep them close to the upper funnels during the sulfuric acid extractions, as shown in the first three sets of funnels from left to right in figure 2. After these extractions are completed the chloroform solutions are combined in the upper funnels. The lower funnels are cleaned with warm water, the blocks (E) are removed, and the chloroform solutions are filtered into the lower funnels through plugs of cotton held in glass Gooch crucible holders, which rest in the necks of the lower funnels, as shown in the fourth and fifth sets of funnels in figure 2. Here the chloroform solutions are washed with sodium bicarbonate solution and again filtered through plugs of cotton into 500-ml. Erlenmeyer flasks with standard taper 24/40 joints, as shown in the last three sets of funnels in figure 2. The details of the above procedure are described by Schechter et al. (1).

The part of the rack used for the extraction of nitrated DDT holds a single bank (D, D') of eight 125-ml. separatory funnels. It is constructed to use the same uprights as the first part in order to save space. At each end of the rack two storm-window braces (G, G') are fastened to the uprights below the bank (C) and to the board (D, D'). This board swings on the storm-window braces and can be pushed back out of

1/The author is indebted to Mrs. A. C. Hazen for the drawings and to R. A. Fulton and E. L. Gooden for the pictures.

the way when not in use or pulled out in front when ready for use. Reversed bolts in spring-type night latches (F) fastened at each end of the board (D, D') in the back serve to hold it in the proper position. The springs on the bolts push them into holes drilled at the required height in the uprights. The two latches (F) are connected by a chain so that both bolts may be unlatched with one hand.

Since the size and shape of different makes of separatory funnels vary, it is suggested that all the separatory funnels be bought from the same company and the rack made to fit the funnels.

Literature Cited

- (1) Schechter, M. S., Pogorelskin, M. A., and Haller, H. L.
1947. Colorimetric determination of DDT in milk and fatty materials.
Analyt. Chem. 19: 51-53.
- (2) _____, Soloway, S. B., Hayes, R. A., and Haller, H. L.
1945. Colorimetric determination of DDT. Color test for related compounds. Indus. Engin. Chem., Analyt. Ed. 17: 704-9.

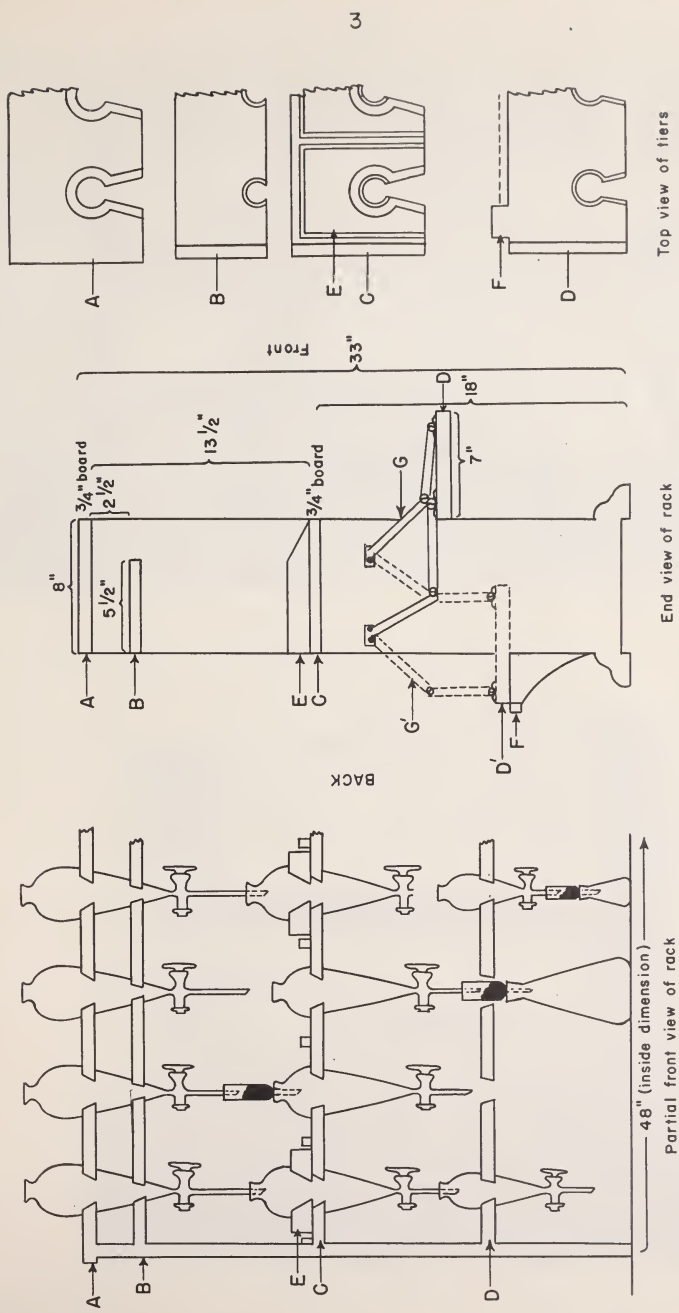


Figure 1.—Diagram of dual-purpose extraction rack



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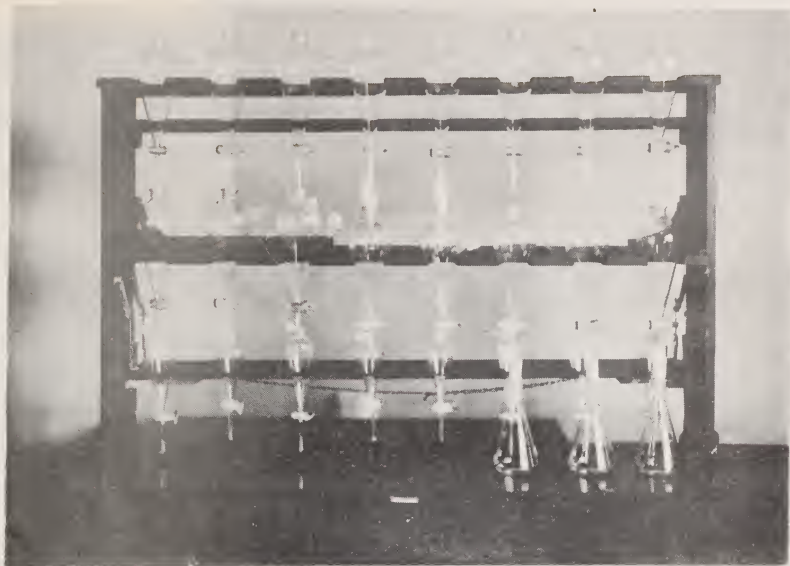


Figure 2.--Use of the rack for separation of DDT from milk and fatty materials.

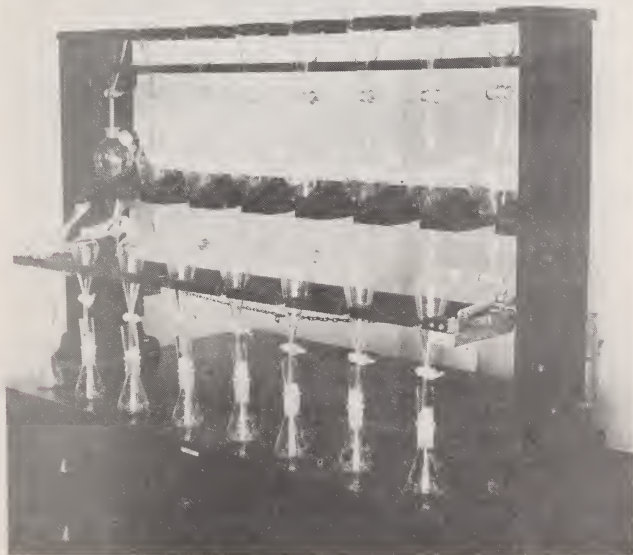
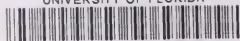


Figure 3.--Use of the rack for extraction of nitrated DDT with the bank (D, D') of eight 125-ml. separatory funnels pulled out in front ready for use.

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